

INDEX OF SURGICAL PROGRESS.

General Surgery.

I. THE ORIGIN AND CAUSATION OF SUPPURATION BY CHEMICAL IRRITANTS.
By Dr. E. SCHEUERLEN (Berlin). Three investigators, Uskoff, Orthmann and Councilman (1881, 1882 and 1883, respectively), had previously attempted to determine whether chemical irritants or only micro-organisms could cause suppuration. They all obtained affirmative results. The methods of the first two are, however, decidedly open to criticism and that of Councilmann is not quite proof. The general method of the latter further perfected was employed by S., under direction of Dr. Fehleisen and Prof. von Bergmann. S. took common fusiform lymph tubules of glass, which suck up the experimental fluid by capillarity and can be easily sealed by melting their ends. In the first of two series of experiments he used those holding nearly or quite a drop (2 to 4 cm. long, 2 mm. across at middle point); in the second those holding about 4 drops (3 to 5 cm. x 3 mm.). These prepared tubules were then exposed in Koch's apparatus to a current of steam of 100° C. for half an hour.

The following substances were tried : Oleum terebinth, ol. crotonis (1:5 ol. olivar.), ol. sinapis (1:5), ol. cantharid, ol. carophyll, ol. macidis, ol. sabinæ, ol. cajeputi, ol. juniperi, tartar. stibiat. (1:3 aq. destil.), inf. rad. ipecac (5:50), decoct. fruct. caps. (5:50) and acid. formic. Sterilized water was used for control experiments.

S. introduced the little spindles by means of a hypodermic-like needle 10 cm. long, with a rod (follower) in its interior, adjustable by a screw. This tube was 3 mm. in diameter in the first series and 4 mm. in the second. In this way the little spindles could be passed well under the skin with the smallest possible wound. Only rabbits were experimented with—32 in all. As a disinfectant $\frac{1}{10}$ % sublimate solution. He always punctured between vertebral column and crista ilei. A spot slightly larger than a half-dollar piece was clipped and thoroughly washed with the sublimate; this he considers preferable to the apparently more thorough methods of producing eczema. The needle, spindle, etc., are laid in the sublimate; a current of the disinfectant plays on the spot to be punctured; this is raised and the tube introduced, when the spindle is pushed out at the point desired.

The slight wound did not need suturing but was covered thick with iodoform colodium, especially to prevent the animal licking it.

The subsequent course was in general as follows : The tubule lay without any reaction beneath the skin. After 8 or usually 10 to 14 days it was smashed—the ex-

ternal wound having entirely healed. A day or two later a slight swelling appeared at the point where the spindle was broken, increased to the fourth day, remained stationary until about the twelfth, and then slowly diminished. The lump felt hard, but was freely moveable in the loose tissue; fragments of the glass could not be felt. The rabbits were killed four to eight days after smashing the tubule. The circumscribed lump had on section a yellowish white color, separated by a sharp contour from the bluish-white subcutaneous tissue, and resembled a lump of fat, though less yellow, and presenting a smooth surface. Muscle and skin were not affected.

The size of the tumors varied in the first series from 3 to 4 cm. in length, $1\frac{1}{2}$ to 2 cm. in breadth and $\frac{1}{2}$ cm. about in thickness; in the second series from 5 to 6 cm. in length, 3 to 4 in breadth and about 1 cm. in thickness. Ipecac-infusion, pepper-decoction, tartar emetic, oil of cantharides and formic acid were the least active, the others nearly equal.

In Councilman's experiments pus was found where here there was an organized firm tissue. Pressure here brought clear lymphatic fluid to the cut surface—no pus. Fragments of the tubules—where the latter were not entirely crushed—contained the same clear fluid and even young fibrous connective tissue.

Microscopic examination of the capsule from preparations hardened in alcohol showed, when colored with methyl-violet or Löfller's alkaline methyl solution, a cellular infiltrated connective tissue more charged with cells towards the inner surface adjoining the tubule; these at some points almost hid the intercellular substance. Bacteria were never found. In nine cases immediate cultures were tried with negative results.

Not only the macroscopic and microscopic examination showed that the substance was not pus but also the fact that it could be hardened in alcohol and cut. Moreover, in the only case where the animal was allowed to live 24 days, the entire inflammatory growth disappeared; a thin fibrous layer, in color not distinguishable from the other subcutaneous tissue, surrounded the remains of glass. Two experiments with sterilized water produced no swelling; only a rather thin veil-like capsule of connective tissue was found.

In one case only did he get pus—and here a thin cord reached to the point of puncture which had not healed; here a few micrococci were found.

He concludes that chemical irritants in quantities such as here used are only able to produce inflammation, never suppuration.—*Arch. f. klin. Chirg.* 1885. Vol. 32. Hft. II.

II. ON THE DISINFECTING ACTION OF AQUEOUS SOLUTIONS OF CARBOLIC ACID. By Drs. GARTNER and PLAGGE. An investigation of the effect of 1, 2 and 3 % carbolic acid and $\frac{1}{10}$ % sublimate solutions on the micro-organisms of pus, osteomyelitis, meningitis, glanders, splenic fever, typhoid, etc., to determine strength of solution and length of exposure to the same necessary to kill the said germs. The method consisted of pure cultures in glass bulbs containing sterilized bouillon for 1 to 3 days; then shaking 1 cm. of this with 49 cm. of a 1, 2 or 3 % carbolic or

$\frac{1}{10}$ % sublimate solution; removal of a drop at the end of 8 seconds to 5 minutes and cultivation of this in gelatine. The amount resp. absence of colonies developing in this showed the success of the disinfection. The results are presented in a table. The organisms from a non-traumatic meningitis proved most resistant, some of these withstood $\frac{1}{10}$ % of sublimate for 1 minute, and both these and the osteomyelitis cocci withstood short contact with 2 % carbolic. On the other hand every form was killed by 3 % carbolic for 8 seconds.

Hair taken from a Guinea pig's back—which had been well rubbed with micrococcus prodigiosus and then disinfected with 3 % carbolic—produced in one case no colonies and in another but 2.

Scalpels, silk, etc., were also examined. Well washed towels were found comparatively free from germs,

They conclude that 3 % carbolic suffices to rapidly destroy the various micro-organisms which as yet chiefly interest the surgeon—provided it is possible to bring them quickly into contact.—*Arch. f. klin. Chirg.* 1885. Bd 32. Hft. II.

III. OBSERVATIONS AND INVESTIGATIONS ON TRAUMATIC TETANUS. By Dr. P. GUETERDORF (Berlin). 2. On Traumatic Tetanus from Local Freezing. G.'s previous article (same Archives, vol. 30) was on tetanus hydrophobicus. In the present he has collected sixteen cases (one in an appendix) of tetanus following local congelation; these include two new ones, while certain others from their indefiniteness are not reckoned. But one of these cases was a female.

The English Crimean war report gives two cases, a German corps in 1870-'71 gives one, the Prussian army of 1877-'78 gives two and our rebellion one, while French soldiers seem to be slightly more disposed. Although this form is very rare, still in the first three of these war reports it amounted to nearly 4 % of all cases of tetanus (5 in 115).

Most of these patients were under poor hygienic conditions and the freezing, with perhaps one exception, was very severe. The lower extremities were in all the cases the seat of the principal primary trouble. In two cases the parts had been amputated and hence questionable if they belong here. The complication set in from four to eighteen days after freezing. No prodromata. Course acute. Some fever. One recovery.—*Arch. f. klin. Chirg.* 1885. Vol. 32. Hft. I.

W. BROWNING (Brooklyn).

IV. THE PREDISPOSING CAUSES OF ANEURYSM. A STATISTICAL INQUIRY. By JOHN B. HAMILTON, M.D. (U. S. Marine Hosp. Ser.). By a study of statistics obtained from inebriate asylums, health reports, the provost marshal general's bureau, glass workers and other workmen and the fire-rooms of steam vessels, where a continuous high temperature is found, Surgeon-General Hamilton concludes that the only constant element among the alleged causes of aneurysm is climate; that neither syphilis, alcoholism, occupation nor heat alone appear to have an appreciable influence on the causation of the disease. The question of the influence of diet he leaves open.

V. COMPARATIVE RESULTS OF OPERATIONS IN BELLEVUE HOSPITAL. By STEPHEN SMITH, M.D., (New York). Formerly everything was subordinated to celerity in operation; now mere haste is mentioned but to be condemned; recovery without suppuration is the end sought; perfect cleanliness and thorough antisepsis of operation, assistants, patient, instruments and dressings is required, by the use of (1) soap and water to external parts, (2) carbolic solution for all instruments, (3) bichloride solution for all surfaces and tissues and (4) iodoform for external dressings—all this in contrast with the disregard for cleanliness formerly in vogue. Sponges are elaborately purified; the ligature is aseptic and not expected to "come away," drainage tubes used but as a temporary expedient, if at all, no suppuration being expected, and the lips of a wound being brought by deep and superficial sutures into complete apposition; in contrast with former careless methods of applying dressings the present method is careful in the extreme, consisting of a dusting with iodoform, layers of disinfected material with iodoform between the layers, the whole being retained by bandages of disinfected materials carefully preserved in a disinfected atmosphere. The results obtained are as much in contrast as are the procedures: Compound fractures, which under the old fracture-box or gypsum-splint treatment always suppurated, resulting often in loss of life or limb, are almost uniformly cured without any drawback by (1) removing from the wound every particle of matter liable to injure the tissues and induce suppuration; (2) placing in fixed apposition all the tissues composing the wound; (3) cleansing and disinfecting the wound and protecting it from becoming soiled during recovery; (4) protecting the wound by immoveable dressings from any movement of the parts entering into it while the process of repair is going on. Amputations, the wounds from which rarely, if ever, recovered, except after long continued suppuration, the larger ones being terribly fatal, are now among the most successful operations. Excision of the larger joints, which was formerly a most doubtful and dangerous operation, involving suppuration and confinement for months, as a rule now do not suppurate, union taking place by rapid and healthy granulation. The danger of secondary haemorrhage after ligature of large arteries has passed away now that the artery need no longer be divided by the ligature, but is strengthened by a non-irritating and preferably absorbable ligature; no suppuration occurring, the artery enlarges externally at the seat of the operation, while the coagulum organizes internally and closes its calibre. Cold abscesses, not connected with bone, were preferably allowed to open themselves, or, if touched at all, opened by a "valvular" incision and the pus allowed to flow out at several sittings; now they are cured promptly, without suppuration, by opening freely and, with the curette, scraping out all old granulations and diseased tissues, cleansing the cavity with bichloride solutions, and pressing the walls together with disinfected dressings; abscesses connected with bone are freely opened and thoroughly cleansed with bichloride solutions, which secures rapid recovery. Fractures of the patella, formerly the surgeon's *bête noir*, are invariably cured by wiring the fragments, with antiseptic precautions. The same change is observable in the gynaecological surgery

of the institution. All these improvements are secured in spite of the fact that the hospital is an old shell, containing in its walls and its environments all the conditions that in modern times are regarded as unhealthful and unsanitary and can be attributed only to the superiority of the methods now employed over those formerly in vogue.

Operative Surgery.

I. THE RADICAL CURE OF HERNIA AND HAEMORRHOIDS BY ELECTROLYSIS.
By J. CRAFT, M.D. (Cleveland, O.). Dr. Robert Newman, of New York, reports, in a paper read before the Fifth District Branch of the New York State Medical Association, the application of electrolysis to the radical cure of hernia and haemorrhoids by Dr. Craft. The hernia is first reduced and held in place by the index finger passed into or through the external ring, if possible, the cord and the sac, if it remain in the ring, being kept pressed well to one side. The skin over the external ring is punctured with a bistoury and through this puncture is pushed a blunt-pointed needle electrode, insulated to within a quarter of an inch of the end, and attached to the positive pole of the battery, the electrode being carried well up between the rings by the side of the invaginated finger, which holds the cord and vessels from contact with it. The other electrodes may be held by the patient, with the hand of the side operated upon, or elsewhere, as may be desired. The circuit of about ten cells of a galvanic battery is then connected and the current continued for from six to ten minutes, the point of the electrode being changed from one side of the finger to the other, always keeping as clear of the cord as possible and directing the current away from it. Dr. Craft uses the positive pole because it is not as painful as the negative and, being the acid pole, he conceived that it would excite sufficient inflammation and at the same time coagulate the blood in the small vessels, creating a harder cicatricial inflammation than the negative or alkaline pole, which he considers to have the effect of softening the tissues and causing the absorption of already formed cicatricial tissue. There is no suppuration resulting from this method, since no foreign matter is deposited for a nucleus as in case of treatment by injection. The patient should remain in bed for at least two weeks and then use a well fitting truss for a time, until the part becomes strong and firm. Dr. Craft reports success with three cases treated by this method. The same method has proved eminently successful in the treatment of haemorrhoids.—*Med. News.* 1885. Oct. 24.

II. A MODIFICATION OF THE PROCEDURE OF WIRING BONES. By WM. F. FLUHRER, M.D., (New York.) Describes and illustrates a combined hook and drill, a two-pronged fork with the tips of the prongs notched, and a special form of retractor, to be used in wiring bones, with the application of the method to resection of the knee joint. The bone is drilled through and, by means of the fork, a silk loop is applied to the hook of the drill, which is then drawn back, carrying the silk with it through the bone. It is essential that the closed end of the loop should lie between the bones, on the opposite side from the external opening, and if a loop

needs to be reversed to obtain this, a second thread can be passed through the first loop, which is then drawn back. A piece of wire more than double the thickness of the bones in length, is provided, the ends hooked and caught into loops passing through corresponding channels in the two bones, and the loops drawn back, carrying the wire with them, which is then embedded in the bone and firmly twisted. By this method bones can be wired together with less disturbance of the soft parts and, the sutures passing entirely through both bones, they are more closely and firmly-held together than by any other method, while the grating formed by the sutures prevents the intrusion of the soft parts.—*N. Y. Med. Record.*, 1885, Sept. 26,

J. E. PILCHER (U. S. Army).

Head and Neck.

I. ON THE MODERN INDICATIONS FOR TREPHINING, with especial references to haemorrhages occurring from the middle meningeal artery. By Dr. P. WIESMAN (Zürich). In this paper, 226 pages in length, and containing over 300 cases, many of which were observed at the Zürich surgical clinic (Prof. Krenlein) and are now published for the first time, the author presents a valuable contribution to the question of operative treatment of certain injuries of the head. About two-fifths of the whole work, with 278 cases, is devoted solely to the subject of the middle meningeal artery. Very little attention is given to the technical side of the subject; the author favors antiseptic treatment, the use of the trepan when the skull is intact, that of the chisel and hammer when it is fractured, and would have the integument closed over the opening with the help of sutures or a plastic operation.

After showing how the operation of trephining has become more frequent with our increased knowledge of the pathology of the brain and with improved antiseptic methods, he considers the indications for trephining as represented by the following conditions: 1. Compound fractures of the skull—energetic primary disinfection of the parts being the principal object here, as well as the removal of foreign bodies and fragments of bone, to secure favorable conditions of the wound; simple fissures communicating with a wound should only be opened up in case entrance of septic matter is suspected. 2. Compression of the brain inside the cranial cavity—with the purpose of removing the cause of compression, when it is accessible. 3. Diseases of the bones of the skull, such as necrosis or caries, syphilitic or tubercular disease—the object here being to remove infectious processes. 4. Tumors of the brain or its surroundings—an indication belonging to the present era. 5. Such maladies as epilepsy, headache, in certain cases.

The author speaks in favor of trephining for each of these affections, not, however, adducing anything of special note, beyond the cases, excepting under the second heading: *Compression of the brain* may result (1) from intra-cranial haemorrhage, (2) from accumulation of pus between the skull and the dura mater or from abscess of the brain, (3) from depression of the skull and (4) from the presence of foreign bodies or fragments of bone, especially of the tabula interna. The treatment of compression should be operative whenever it is due to purulent accumulation or

brain abscess, to spicula of the tabula interna producing marked brain symptoms, or to foreign bodies, provided they be easily reached.

Trephining is contra-indicated in ercutaneous depressions of the skull, especially in children, and when a foreign body has penetrated the brain in such a manner that its removal would necessitate searching for it in the brain substance. In cases, however, where death is imminent from extravasations due to crushing of brain-matter, the author believes an attempt to save the patient's life by trephining justified.

As to the treatment of haemorrhages situated between the dura and the skull, trephining is indicated as soon as marked symptoms of pressure are developed, and the situation can be ascertained with some certainty.

Rupture of the *middle meningeal artery* here absorbs the main interest, other haemorrhages receiving only cursory notice, and the cases given are specially classified and tabulated. After an anatomical survey of the course and the topographical relations of this artery, the author enumerates the causes of injury as follows. Direct wounding of the vessel by sharp instruments; laceration by projectiles or fragments of bone; rupture by changes in the relative position of the surrounding bones (the most frequent course); rupture without fracture of bones in consequence of differing elasticity in the tissues, occurring especially on the side opposite the injury.

Rupture having taken place, commotion of the brain prevents the flow of blood; but sooner or later haemorrhage occurs and severs the dura (unless injured) from the skull. The clot may become putrid even when not exposed to the air.

The *symptoms* pointing to rupture of the middle meningeal artery are given as follows: (1.) Interval of consciousness between the concussion and the appearance of pressure symptoms: somnolence, sopor, coma, death. Pareses and infrequent pulse are often present; and sometimes irritation symptoms precede the latter unconscious state. Compression symptoms may occur at any time from fifteen minutes to eleven days after the commencement of the haemorrhage. (2.) Hemiplegia on the side opposite the injury. This is explained by the position of the artery exactly over the motor-centres for the arm and leg. Isolated paralysis of the leg is never observed, but only paresis when the arm is paralyzed; or both may be similarly affected at once. Convulsions may precede the affection. The author does not consider the cases of collateral hemiplegia sufficiently authenticated. (3.) Changes in the pulse—infrequency and hardness, generally increasing; sometimes the pulse becomes frequent at the last (paralysis of the pneumo-gastric nerve). (4.) Anomalies of respiration—slow, embarrassed, stertorous breathing. (5.) Vomiting. (6.) Changes in the pupil; generally speaking dilated pupils point to considerable pressure; the pupil on the side of the haemorrhage is dilated and does not react. (7.) Unilateral impairment of sensation (observed in seven of the cases). (8.) Aphasia. (9.) Disorders of the bladder and rectum. (10.) Automatic movements, and lying always on one side (3 cases). (11.) Rise in temperature (the highest being 42.6° C.).

The *diagnosis* is sufficiently accurate if the first four of these symptoms are present, whether there be a lesion of the skull or not, or even if there be one on the opposite side.

Aphasia points to an extension of the haemorrhage toward the front, disorders of sensibility to one behind, paralysis of the third pair of nerves to one towards the base of the skull. Crushing of brain-matter, inflammatory conditions, even congestive hyperæmia, may cause errors of diagnosis.

The *prognosis* is unfavorable, though not hopeless. Eighty-nine and twelve-hundredths per cent of the cases treated expectantly died. Simple contusions give a far better prognosis.

The *treatment* must fulfill two indications, to stop the haemorrhage and to relieve the brain from pressure. The question of ligating the artery and disinfection of the seat of the haemorrhage, and the point of tying the vessel are next considered and the line of treatment summed up as follows: Operative treatment is indicated (a) in cases of haemorrhage through a wound of the skull, (b) in all cases of compound fracture, (c) in cases of sub-cutaneous fracture of the skull when the meningeal artery is ruptured, especially when the rupture occurs on the side of the injury, or even when there is no fracture. (d) The haemorrhage is to be stopped by means of a ligature or with a suture; in case these methods are impracticable tamponade with iodoform gauze is recommended. (e) The main object in operating is to entirely remove the extravasated blood and to thoroughly disinfect the cavity which it occupied.—*Deutsche Zeitschr. f. Chirg.* Bd. 21, Hft. I and III. Bd. 22, Hft. II.

II. PARALYSES OF THE MUSCLES OF THE LARYNX AFTER EXTRIPATION OF THYROID TUMORS. By Dr. Fr. JANKOWSKI (Heidelberg). Removal of goitrous tumors having become more frequent of late, owing to the diminished mortality-percentage of this operation, the author has been enabled to study more particularly one of the sequelæ attaching to such operations, namely, paralysis of the laryngeal muscles.

He first gives a case where a goitre was removed without improving the impaired phonation; one year later paralysis of the posterior crico-arytenoid muscles was observed, which eventually yielded to electrical treatment and subcutaneous injections of strychnia.

And after enumerating in tabular form all the eighty-seven cases (among them eight hitherto unpublished ones) in which, out of the 620 extant ones, laryngeal symptoms obtained, only forty of which, however, were examined with the laryngoscope—he proceeds to discuss the symptoms and pathology of laryngeal paralysis, dividing them into symptoms of phonation and of respiration. His material is represented by thirty-two cases of the former class, eleven of which are mixed in character and six of purely respiratory disorders.

He concludes that removal of a goitre may improve or impair the voice, and that such disorders of phonation may appear immediately or some time after extirpation. The cause of such injury of the voice may be primary or secondary; in either case lesion of the nerves occasions the disorder, the laryngeus inferior or the recurrent nerve being wounded.

After section of the trunk of the recurrent branch complete paralysis of the same

side of the larynx results; if only branches are injured pareses ensue. Other injuries occasion similar effects, as ligating the nerves, compressing, stretching, tearing or dissecting them out. Haemorrhages suffice to compress them. Inflammation of the larynx frequently results from surgical treatment, irrigation with carbolic acid solution or mechanical violence. Secondarily, nerve lesions (inflammation, degeneration) may result from cicatricial pressure. Other cases again are pathologically quite inexplicable and the author supposes that the removal of the thyroid gland itself is the sole cause of them, the physiological function of this organ being yet unexplained.

In the further course of the affection, these paralyses may either recede, or they may remain in *statu quo*; an apparent improvement may be occasioned by development of the muscles on the opposite side. Electricity is of use in the treatment. The prognosis is more favorable in cases of nerve stretching and inflammation; but even after section of the nerve restitution is possible, though it does not always take place. Death may ensue after severing the nerve (eight cases). Cicatricial pressure is very unfavorable though rare; still recovery is not impossible.

Purely respiratory paralyses are more rare, only seven cases being extant in all.

Respiration may be disordered immediately after the operation or later on, while phonation remains unimpaired or even improves. Injury to the recurrent nerve may cause embarrassment of respiration, by affecting the posterior crico-arytenoid muscles, the dilators of the larynx. Bilateral paralysis must be referred to the pneumogastric. The causes of these lesions are similar to those mentioned above. Tracheotomy is frequently necessitated. The prognosis is less favorable than in the other cases, because the affection is more persistent; indeed, recovery is only recorded in a single case; and the patient's condition is always critical.

In conclusion the author adds an index of the literature of the subject and also seven new cases of affections of the larynx, three operative ones of Czerny, of Heidelberg, three of Baumgärtner, of Baden-Baden, and one of Koenig, of Göttingen, without remarks.—*Deutsch. Zeitschr. f. Chirg.* Bd. 22. Hft. II.

W. VAN ARSDALE (New York.)

III. TRANSPLANTATION OF A RABBIT'S EYE TO A HUMAN ORBIT. By H. W. BRADFORD, M.D. The patient, a man at 35, was the subject of atrophy of one eye, the result of an injury received during childhood. The stump having been removed, the recti muscles being divided close to the globe and held by sutures, and the optic nerve treated in the same manner—the latter suture passing as nearly as possible through the centre of the nerve—a rabbit's eye, whose iris nearly matched that of the patient, was enucleated with care, the recti tendons being divided close to their insertion, the optic nerve cut at about 8 mm. from its sclerotic entrance, and both the patient's orbit and the rabbit's eye bathed in egg-albumen; the nerves were then sutured together, the patient's recti fixed by sutures to the subconjunctival tissue and his conjunctiva attached to a band of conjunctiva which had been left about the rabbit's cornea, the eyelids closed, dusted with iodoform and a pad of absorbent

cotton and a flannel bandage applied. The nerve suture was withdrawn on the seventh day, with those of the superior and internal recti, that attaching the external rectus having already sloughed off and allowed the muscle to contract, drawing a part of the conjunctiva with it, exposing the subjacent sclerotic. The suture of the inferior rectus sloughed away by the twelfth day. On the eighteenth day from the operation the conformation and tension were good, the cornea had become cleared sufficiently to allow the iris to be distinctly seen and was improving; the exposed sclerotic was nearly covered and the ocular movements, in all directions, good. Vision was not expected and the desired cosmetic effect seemed to have been excellently secured.—*Boston Med. and Surg. Jour.* 1885. Sept. 17.

IV. CASES OF RECOVERY AFTER FRACTURE OF THE VERTEBRAE. By J. D. STRAWBRIDGE, M.D., (Danville, Pa.). Patient was struck by a locomotive, causing a fracture of the third cervical vertebra through the bifurcation of the spinous process and the pedicle on the left side, with displacement. Reduction was obtained by traction, and a plaster splint applied to the back and sides of the neck, extending from the shoulders up under the ears and the back of the head. The splint was removed by the patient four weeks later, but it had to be reapplied and worn for three weeks more, when it was permanently laid aside, and, fifty-three days from the date of the injury, the patient was discharged, cured.

A second case was crushed in a mine, the bodies of the seventh, eighth and ninth dorsal vertebrae being crowded into one another and the sixth and tenth injured. The heads of the eighth, ninth and tenth ribs were dislocated on the right side and the ninth and tenth on the left. The spine from the sixth to the tenth vertebra projected, forming nearly a semicircle. The patient was immobilized on a bed constructed for the purpose and pads applied to keep up moderate pressure on the necks of the dislocated ribs. This was continued thirteen weeks, at which time he was allowed to move in bed and soon after to sit up. Five months from the receipt of the injury he was discharged, cured. There was no paralysis nor symptoms of spinal trouble, but there was reduction in stature and deformity and stiffness of the spine.—*Phila. Med. News.* 1885. Oct. 10.

J. E. PILCHER, (U. S. Army.)

Chest and Abdomen.

I. LATERAL LAPAROTOMY. By Dr. POLAILLON (Paris). In certain cases where the median operation of laparotomy has been performed for intestinal obstruction considerable difficulty has been experienced in closing up the wound, owing to the very great distension of the intestines with gas. Sometimes the manipulation of the intestine in trying to reduce it, and the puncture of its walls to allow the gas to escape, has been a serious complication of the operation.

In such cases Dr. P. has found that an incision in the inguino-iliac region, parallel with the fibres of the external oblique, has been much less liable to these objections. The reason of this he believes to be (1) because the lips of the wound tend to come together in virtue of their direction; (2) because at the side the action of the dia-

phragm in producing downward and forward displacement of the intestines is less than it is in the middle line.

It has been found easy to make an incision sufficiently large to admit the hand. The deep epigastric artery, or some of its branches, is generally divided but can be easily secured with ligatures. In cases where there is no clue to the site of the obstruction, the median incision is recommended, but where either pain or swelling point to a lateral situation of the obstruction, the lateral incision has the advantage of being more over the site of the obstruction, of facilitating the closure of the wound, and of being better adapted for the formation of an artificial anus, should the state of the bowel require it.—*Gaz. Méd. de Paris.* 1885. V. April 25.

II. NOTE ON THE VALUE OF "THE DIAGONAL LINE" IN THE DIAGNOSIS OF DISTENSION OF THE GALL-BLADDER. By Mr. JOHN W. TAYLOR. In cases of distension of the gall-bladder, where the diagnosis is otherwise obscure, Mr. Taylor has found "an important aid to diagnosis" * * * "in the recognition of the diagonal line in the direction of which the gall-bladder enlarges. This is to be traced from the normal position of the larger end of the gall-bladder (near the tip of the cartilage of the tenth rib on the right side) to the opposite side of the abdomen, crossing the middle line slightly below the umbilicus." By tracing the long axis of certain obscure abdominal tumors to this line Mr. Taylor has been much helped to arrive at their proper diagnosis as that of cases of distended gall-bladder.—*Brit. Med. Jour.* 1885. April 11.

III. ABDOMINAL SANGUINEOUS CYST; ASPIRATION; RECOVERY. By Dr. SINCLAIR (Dundee). This case is of interest from the unusual nature of its contents and from the uncertainty of its mode of origin. A smooth swelling appeared near the umbilicus of the patient, an intemperate man, a flax-dresser, two months before admission. It had grown rapidly, till it occupied a large part of anterior and right side of the abdominal wall, in which it appeared to be situated. No fluctuation impulse nor vascular bruit could be detected. With the aspirator 60 ounces of fluid were withdrawn and in fourteen days the patient left the hospital cured. The fluid was of a dark sherry color, specific gravity 1020, containing nearly 50 % of albumen, abundant red blood corpuscles, and some amorphous masses. No echinococci nor hooklets. A year after dismissal patient was in good health, but with some indications of reaccumulation of the fluid.

The tumor was considered to be extra-peritoneal, probably traumatic in its origin. Several other cases of sanguineous abdominal cysts are referred to, but Dr. Sinclair has not found reference to any one exactly similar.—*Lancet.* 1885. April 4.

IV. CASE OF PENETRATING BULLET WOUND OF THE ABDOMEN, WITH NUMEROUS PERFORATIONS OF THE INTESTINES, TREATED BY ABDOMINAL SECTION. By Mr. T. ANNANDALE (Edinburgh). On the 9th of March last, when two lads were playing with a loaded revolver, one of the chambers was accidentally discharged and struck one of them in the abdomen. He put his hand over the spot and walked

about 100 yards to the nearest house. A temporary dressing having been applied he was conveyed to the Infirmary and was seen by Professor Annandale at once, about an hour after the accident had happened. He was found to be suffering from slight general shock and to be complaining of a little pain in the region of the abdomen and pelvis, but was perfectly sensible. It was found that the bullet had penetrated the clothes over the lower part of the abdomen, and had wounded the abdominal wall $1\frac{1}{2}$ inches below and $\frac{1}{2}$ inch to the left of the umbilicus, the textures and tissues round the bullet track being scorched. On inquiry it was found that the bullet was conical, $\frac{1}{2}$ long by $\frac{1}{4}$ inch in breadth at its base. The patient was put under chloroform and a longitudinal incision made so as to include the bullet-wound. On careful dissection the peritoneum was seen to be perforated, so the incision was enlarged and abdominal cavity freely opened. It was found that the bullet had penetrated the alimentary canal seven times—by three openings close together in the small intestines ($3\frac{1}{4}$ feet below the duodenum, as shown at the post-mortem examination afterwards) by two openings in the descending colon and by two in the rectum; there was also a large vein wound in the mesentery. The intestinal wounds were "stitched by means of a continuous suture of fine catgut, after Lembert's method," and the wounded vein was ligatured also with catgut. No trace of faecal extravasation could be detected. During the operation the exposed intestines were protected by towels wrung out of warm corrosive sublimate lotion (1-2000). The abdominal and pelvic cavities were sponged out with the same lotion, and the abdominal wound was stitched up with superficial and deep sutures, no drainage being put in. The patient did well until early next morning, when he became restless, complained of abdominal pain and began to sink. This continued till his death at 12 noon, i. e., the day following the accident.

At the post-mortem examination signs of peritonitis were seen. The wounds in the rectum and colon resisted a powerful stream of water passed through the intestinal canal, but a slight leakage occurred where the small intestine was wounded. The bullet was found in front of the right ischial spine. There was no sign of faecal extravasation in the peritoneal cavity.

Professor Annandale believes that where there is any sign of sepsis it would be better in future to insert a drainage tube.—*Lancet.* 1885. April 25.

V. INTERNAL STRANGULATION OF SMALL INTESTINE; LAPAROTOMY; CURE.
T. C., æt. 17, porter, admitted July 23, 1884, to the Hôpital de la Pitié. The patient had never previously been laid up. For eight months before admission he had had an easily reducible inguinal hernia, the size of a pigeon's egg, on the right side. He had worn no truss. On the 15th of July he felt acute pain in the region of the hernia, spreading over the whole abdomen, the hernia being at the time irreducible. A few hours afterwards he was able to reduce it, and it did not again return. On the 16th of July he began to vomit green and bitter material. This lasted for several days, the stomach meanwhile became distended. The last stool was on the 15th of July. Enemata had been the only means employed to cause the bowels to act.

When seen (eight days after symptoms had begun) he had the appearance of hernial cholera ("du choléra herniare"); eyes sunken and surrounded by a dark ring; face pale, cheeks slightly red. Great prostration, tongue pale, but not dry. Pulse regular and full 84. Temperature 39° ($102^{\circ}.2$ F.) Respiratory and urinary systems normal. Abdomen inflated and globular. No prominence pointing to special distension of either great or small intestine. Faecal vomiting but without much smell. Constipation and absence of passage of gas by anus complete. There was no trace of the former hernia and no apparent cause for the obstruction.

Operation.—Two fingers' breadth above the fold of the right groin and parallel to Poupart's ligament, an incision 8 to 10 centimetres ($3\frac{1}{2}$ inches) in length was made, and the parts were carefully dissected down to the deep epigastric artery which was ligatured and divided. When the peritoneum was opened about 50 grammes ($1\frac{1}{2}$ ounces) of yellow serous fluid escaped. The internal abdominal ring was felt from the wound with the finger to be quite free. The wound was next enlarged so as to admit the hand, and then a firm band or bridle was recognized on the left side, passing from the inguinal region towards the umbilicus. Although a sac of peritoneum existed between the band and the abdominal wall there were no coils of intestine within it, but on pulling out the small intestine coil by coil, a part was soon reached which bore evident traces of having been recently strangulated. Dr. P. thought that the strangulation had probably been within the sac. The intestines were sponged with carbolic lotion and replaced. The wound was sewn up. During the operation a carbolic spray was used, and a Listerian dressing, covered over with wadding, was applied afterwards. No attempt was made to divide the obstructing band for fear of haemorrhage, which might have proved very troublesome. The patient made an excellent recovery and left the hospital cured on the 26th of August.—*Gaz. Méd. de Paris.* 1885. April 25.

CHARLES W. CATHCART (Edinburgh).

VI. RECOVERY AFTER LAPAROTOMY FOR ILEUS. By Dr. HENRY F. BEAM (Johnstown, Pa.). A lady, at 48 years, had been confined to bed for two months, suffering from an obscure trouble. She had jaundice, the pulse was small and rapid, the temperature was 101° F., the patient suffered intense pain, and had fallen away forty pounds in weight. For three days she had had occasional attacks of stercoraceous vomiting. Palpation of the abdomen caused great pain, especially in the right iliac region, where there was a prominence resembling a hernia, beneath which could be felt a hard, round substance. Attempts to move the bowels by enemata were unsuccessful. It was finally determined to operate, and accordingly, chloroform having been administered, an incision two inches in length was made over the point of the swelling. The ileum was opened at its point of junction with the cæcum, and the knife immediately struck a hard body. The incision being prolonged, a calculus the size of an English walnut was removed. This was found on section to consist of a small nucleus, the size of a buckshot, surrounded with concentric layers of a material resembling lime, about one-sixteenth of an inch in thickness. The patient made a good recovery.—*The Medical Record.* 1885. Oct. 17.

VII. LIMITATIONS OF COLOTOMY IN DISEASE OF THE RECTUM. By C. B. KELSEY, M.D., (New York). Combats the opinion of Bryant that "in all cases of cancerous stricture of the rectum or colon, including the annular, right or left lumbar colotomy is strongly to be advocated" to relieve suffering, retard progress of the disease and prolong life, the operation being done before obstruction ensues. Cites eleven cases of rectal cancer to show that Bryant's rule is too broad and gives the following indications for the operation:

1. In congenital malformations of rectum or anus in children in which a tentative operation in the perineum has failed to reach the rectal pouch.
2. In intestino-vesical fistula.
3. In tumors occluding the rectum which can not be relieved by any other means—dilatation, division, hot water or electrolysis.
4. In non-cancerous, simple or specific stricture and ulceration of the rectum (with or without fistulae), where the disease can not be relieved by proctotomy or dilatation or division of the fistula and local treatment of the ulceration.
5. In cancer where the disease can neither be removed nor the passage re-established, and where death is probable from obstruction—except in cases where the immediate dangers of the operation more than counterbalance any good likely to be gained by it.
6. In volvulus or intussusception of the colon or sigmoid flexure where reduction by the aid of laparotomy has been found impossible.—*Am. Jour. Med. Sci.* 1885, October.

Genito-Urinary Organs.

I. THE TREATMENT OF ACUTE EPIDIDYMITS WITH SUBNITRATE OF BISMUTH. By Dr. J. A. COMINGOR (Indianapolis). For several years and in many cases, both in hospital and private practice, the author has treated this affection with subnitrate of bismuth, with excellent results. Under its application pain is speedily relieved and tenderness and swelling subside in a short time. Its action is uniformly beneficial. It is used as follows, to-wit: Bismuth in indefinite quantity, water to make a paste about the consistence of thick cream, and with a large camel's hair brush paint the scrotum two or three coatings and repaint at intervals several times daily. To make the directions more definite, take bismuth and water in equal parts, mix, and apply as above. For the purpose of taking the weight off the cord and blood-vessels, some sort of scrotal suspension should be used; if the ailment is severe enough to bed the patient, a broad strip of adhesive plaster or bandage fastened across or around the thighs, with sufficient padding under the scrotum and contents to elevate above the level of the body to favor the return of blood, will be found serviceable.—*The Med. Record.* 1885, Oct. 17. J. E. PILCHER (U. S. Army.)

II. EXTRA-PERITONEAL PARTIAL RESECTION OF THE BLADDER FOR CANCER. By Prof. G. von ANTAL (Budapest). A. believes that epicystotomy, though it has been done but nine times for removal of tumors, is far preferable to Thompson's fa-

vorite median operation. In no one of the nine cases was the bladder-wall, properly speaking, resected, and A. finds but one case (Sonnenburg's) where this has been done—the patient dying four weeks later of exhaustion.

A.'s patient was a man *æt.* 61 years, who had suffered for two years from urinary troubles. For a year the urine had contained blood, though never any characteristic carcinomatous elements. Operated April 23, 1885. After provisory disinfection of the bladder it was filled with 250 ccm. of salt water and a colpeurynter introduced into the rectum; yet on opening the abdominal wall the peritoneal fold was scarcely 1 cm. above the symphysis. This was pushed and held back and the bladder opened. The cancerous nature of the growth and its seat at the crown of the bladder led him to resect the bladder-wall. To avoid opening the peritoneal cavity the peritoneum was prepared off from the upper and partly from the posterior walls. A third of the entire bladder was then removed. Altogether seven bleeding vessels were tied in the vesical walls. The resected edges were united by sublimated silk; two knee-shaped hard rubber tubes in the lower angle of the wound; permanent irrigation of bladder with thymol-solution. The abdominal wound was likewise united except at its lower angle. No fever. Irrigation stopped on sixth day—a soft catheter remaining in the urethra and a long drain in the wound. Most of the urine passed by the drainage tube, which was withdrawn on twelfth day. After scraping off the granulations the wound healed by the seventeenth day. Patient recuperated fast. Urine now clear. Bladder capacity 200 to 300 ccm., and sufficient for three to four hours.—*Centbl. f. Chirg.* 1885. Sept. 5. No. 36.

W. BROWNING (Brooklyn).

III. RUPTURE OF THE BLADDER. By Dr. N. KNOX. This case illustrates the difficulty of diagnosis which is often met with in rupture of the bladder. On 27th December last the patient, *æt.* 30, when drunk, was knocked down and kicked in the abdomen. He lay on the floor all night. Next morning he could not make water and was seized with severe vomiting. On the morning of the 29th a surgeon was called in and by patient's account drew off about two pints of urine with a catheter. On the 30th inst. patient was removed to the Royal Infirmary, still suffering from complete inability to pass water and pain over the whole abdomen. He was in a state of collapse. There were no external traces of injury. The bladder was not distended and only six ounces of bloody urine were drawn off by the house surgeon. The abdomen was not tender, nor were the legs drawn up. Severe vomiting came on soon after admission, and lasted during the evening. Patient stated that he had suffered for years from stricture. Next day patient weaker but vomiting had stopped, and abdominal pain less. Throughout the day patient four times voluntarily passed a small quantity of urine. At evening visit the house surgeon drew off with the catheter about 20 ounces of urine. All the urine contained blood. At midnight patient sank and died, having a short time previously passed a small quantity of urine involuntarily.

Post-mortem examination revealed a vertical intra-peritoneal rupture $1\frac{1}{2}$ inches

in length on the posterior surface of the apex of the bladder. A blood-clot occluded the opening and extended on to the sides of the bladder. The bladder itself was rather larger than usual and contained urine. The peritoneum generally was congested and showed a few spots of lymph here and there. No trace of urine was to be found within the peritoneal cavity. The explanation given is that the bladder, when distended, was ruptured by a kick, and the urine escaping into the peritoneal cavity caused the pain, vomiting and collapse; that this was then drawn off by the surgeon on December 29 by the catheter having passed through the rupture; that thereafter there was partial suppression of urine from the shock, and meanwhile that the rupture was blocked by blood-clot and inflammatory action, which prevented further escape and allowed a certain power over the bladder to be regained. Dr. Knox believes that a certain amount of urine must have been absorbed by the peritoneum. During life the symptoms were considered to be due to over-distension and consequent injury to the bladder in a patient suffering from stricture, with injury to some of the abdominal viscera and slight peritonitis. When such cases are diagnosed in time, Dr. Knox advocates abdominal section above the pubes at once, cleaning out the peritoneal cavity, stitching the wound in the peritoneum with catgut, and freely draining the bladder by median urethrotomy. The bladder is to be stitched with chromic catgut so that the adjacent serous surfaces are in contact.—*Glasgow Med. Journ.* 1885. May. C. W. CATHCART (Edinburgh).

TUMORS.

I A FURTHER CONTRIBUTION ON NEOPLASMS OF THE MALE BREAST. By DR. B. SCHUCHARDT (Gotha). In continuation of his previous article (*v. ANNALS*, vol. I, p. 71) S. gives a large number of cases, mostly German, which he has since been able to collect. These are derived, for the most part, from answers to the request in his first article and to inquiry addressed to the principal surgeons, hospital directors (medical) and pathologists of Germany and Austria. He has thus been able to add 134 to his previous 272 cases, making a total of 406. Of this total fifty-eight were not heterologous and 348 were heterologous, principally carcinomatous. But 219 of the latter are described at all in detail.

As to age (stated in 160 cases) two were under 20 years, seven between 20 and 29, fifteen between 30 and 39, forty between 40 and 49, forty-five between 50 and fifty-nine, thirty-seven between 60 and 69, thirteen between 70 and 79, and one was 84.

Of 131 cases it is known that sixty-three were on the right, sixty-five on the left, and three on both sides. The duration was, in the ninety cases where it is stated, from one-fourth to eighteen years. It is known that 127 were operated and twenty-one not. In seventy-five of ninety-nine cases the axillary glands were infiltrated, in twenty-four not.

Contusions and the like are given as the cause in twenty-five cases.

Of the whole 406 cases, 155 were British, 124 German, sixty-four French, thirty-

one Austrian, nine North American, nine Italian, four Danish, two Hollandish, two Belgian, two Swiss, and one each Portuguesish, Swedish, Russish and Japanese.

Although S. has found twenty-six cases of echinnococcus of the breast, they were all in females.—*Arch. f. klin. Chirg.* 1885. Vol 32. Hft. I.

Bones, Joints, Orthopedic.

I. ON PRIMARY EXTRIPATION OF THE HEAD OF THE FEMUR IN DISLOCATION OF THE HIP COMPLICATED BY FRACTURE OF THE NECK. By Dr. C. WIPPERMANN (Baden). A woman *cet.* 34 years was admitted at Czerny's clinic with an old dislocation of left hip. On an unsuccessful attempt at reduction three months after its recurrence the femoral head was broken off. Owing to the gradual development of an abscess from this, an incision was made five weeks later and the head removed. Gradual recovery, though she still has to go on crutches. He thinks that in this case immediate removal of the separated part would have been preferable.

W. has collected thirteen other cases of like luxation and fracture. One-half of the fourteen were primary fractures, the other secondary, from attempts at reduction. It is known that two cases of extra capsular fracture reunited firmly, while in two of three intra-capsular necrosis followed. A primary fracture here has more chance of reunion than a secondary produced by attempts at reducing an old dislocation. If in the latter case it be also intra-capsular there is little probability of reunion.

He concludes that when fracture as well as dislocation result immediately from the injury, coaptation of the bone ends should be tried, with a view to securing their reunion. If, however, it occurs in attempting reduction we should endeavor to distinguish between those wholly intra-capsular and those not or only partly so; in the latter case we may still hope to get union, but in the former a more rapid cure can probably be secured by immediate extirpation of the separated articular head.—*Arch. f. klin. Chirg.* 1885. Bd. 32. Hft. II.

II. OPERATIONS ON THE SMALL TUBULAR BONES FOR ACUTE AND CHRONIC OSTEOMYELITIS. By Prof. F. PETERSEN (Kiel). 1. *On total extirpation of the clavicle in infectious osteomyelitis.* In January, 1883, a 17-year old ship's carpenter presented himself eight days after the onset of osteomyelitis of the clavicle. The point of greatest swelling towards the sternal end was incised and much pus let out. The bone was for the most part bare and could be easily dislocated at the sternal end; slight twisting served to free its acromial end also, where it was readily removed. Counter-incision over the acromial joint. A thick drainage tube replaced the bone. T. that evening was 39.2° , then for four days subnormal. Suppuration was at first great. Drain removed on the sixth day. The bone had entirely regenerated in four weeks.

Expectant treatment in another case—metacarpus and first phalanx of right thumb—did not lead to new formation of bone but left the part useless.

In an osteomyelitis of the first phalanx of the index finger; early removal. A very useful finger resulted, though slightly shortened and a little stiff. He therefore

pleads for early removal of the sequestrum before the bone-building periosteum has been much injured. A much earlier cure is thus effected. This of course refers only to the bones mentioned in the title.

2. *On the operative treatment of chronic osteomyelitis of the first metatarsal bone.* The question here is as to advisability of saving the big toe. His experience and that of at least some others goes to show that scraping out the diseased part or subperiosteal removal of the said bone does not give better cosmetic results or a more useful foot, nor yet as speedy a cure as removal of both toe and diseased bone. After the latter operation a suitable shoe could be early fitted to the resulting flat-foot—raised along its anterior inner border and supplied with a convex steel spring against the plantar arch.—*Arch. f. klin. Chirg.* 1885. Vol 32. Part II.

W. BROWNING (Brooklyn).

III. PERIOSTEUM-GRAFTING. By C. W. TRUEHEART, M.D., (Galveston, Tex.). Three and a half inches of the central portion of the clavicle having been carried away by a gunshot, and, after six or seven weeks, no possibility of osseous or ligamentous union of the bone being apparent, the new tissue formation in the track of the bone and the cartilages on the ends remaining were removed. Small grafts of periosteum; with or without thin laminae of the underlying bone—each graft about the size of a large flax-seed—were removed from the superficial portions of the long bones of the legs and from the scapulae of dogs, with a short, stout resection knife, curved scissors being used for smoothly completing the section, and the entire surface of the excavated wound and the ends of the bone were set with grafts about $\frac{2}{3}$ of an inch apart. The wound was dressed with perforated oil silk, covered with a compress of lint moistened with 2% carbolized water, held in place with adhesive strips. Seven or eight out of every ten grafts were efficient and from the sixth to the tenth or twelfth day the pale red of the periosteal tissue was seen to grow brighter and under a compound magnifying glass minute points of granulations with their loops of capillaries could be seen cropping out through and blending with the tissues of the grafts; a corresponding activity was seen in the surrounding granulations which arose about and covered in the grafts, leaving little sinuses—communicating with the surface of the wound—which soon became obliterated. At this time another set of grafts was applied. This was done three times in course of a month. and, the excavation having become fairly filled with granulations, skin grafts were applied and superficial cicatrization secured. Two months after the periosteum-grafting the $\frac{2}{3}$, inch gap in the bone was found to be filled with a tissue in all external appearance resembling bone. The patient suffered a simple fracture of the same clavicle some years later, which reunited like normal osseous tissue.—*V. Y. Med. Record.* 1885. Oct. 3.

J. E. PILCHER (U. S. Army).

IV. RESULTS IN TUBERCULOUS DISEASE OF KNEE-JOINT AT THE GÖTTINGEN CLINIC. By Dr. W. WILLEMER (Berlin). This mainly statistical contribution to the subject of tuberculous gonitis is of special importance in so far as it bears a relation

to Koenig's work on tuberculous affections of the joints. The cases forming the material which the author, a former assistant of Koenig, makes use of, were all treated at the surgical clinic of Goettingen, during a period of seven years, ending October, 1882, and were seen and adjudged by Koenig himself, and were therefore all treated from the same point of view.

The author followed up the cases after they had left the hospital as much as possible and omits all more recent ones as not having been sufficiently long under observation.

All operations during the period mentioned were performed with antiseptic precautions; but iodoform, which subsequently proved very satisfactory, was not introduced till towards the end of this period.

The number of cases treated is 174; the author refrains from giving any histories and merely publishes the figures.

He finds that males were more frequently affected with knee-joint troubles than females, and accounts for this fact by traumatisms, which, he concedes, play an important role in the etiology, though he cannot give exact statistical information on the frequency of traumatisms in the histories nor on the question of heredity. The occurrence of the disease, in reference to the age of the patient, is most frequent under ten years. The treatment consisted in dietetic measures and surgical interference; minor operations, tapping, scraping out and bandaging, sufficing in 30 per cent of the cases; severer operations, amputation, resection, being performed in 65 per cent. No internal medication was used. The results point to resection as the most preferable method. Forty-seven per cent treated by the latter method were completely cured, against 40 per cent of the others; while 40 per cent of the cases were cured in all, 30 per cent died, and 10 per cent healed after amputation.

The prognosis is more unfavorable when suppuration is present, severe operations being necessitated and less favorable results being achieved.

As regards the subsequent growth of the limb it is not till after a period of about seven years that a difference can be noted. The leg may be either considerably (3 cm.) shorter, or very little shorter or longer than the unaffected one. In the first case contractions are frequently present; indeed the author is inclined to believe that the contraction is the cause of the shortening of the limb on account of the circulation being impeded. In case of shortened limbs the osseous focus was generally found in the epiphysis of the tibia, but, contrariwise, when the limb was lengthened, the focus was situated in the femur. The shortening found after resection was not greater than in unoperated cases.

The greater part of the resections were performed in the second year of life, the amputations mostly during the first. Complete recovery from the disease was not observed to take place before the second or third year of treatment, even under the most favorable circumstances. But even non-suppurative cases would often not heal till after ten or twenty years. Recurrences were quite frequently observed.

The mortality percentage amounted to 32 for operated and to 28 for non-operated

cases. The operation itself was the cause of death in 25 per cent; one case dying of erysipelas, six of septic affections, and two of carbolic acid poisoning. Sixty-two per cent of the cases died of tuberculous affections and 13 per cent of those treated by resection. Life can be proved to have been prolonged by operations in a number of cases.

Dividing his material into three groups—1. Cases under ten years of age; 2. Between 10 and 20; 3. Those over 20—the author proceeds to give statistical data of each group separately. Thus he finds that severer operations were more frequently necessitated after the tenth year; that the disease was much more frequently (41% to 8%) non-suppurative before the tenth year. The resections were very frequently indicated by contractures (60%) during the first ten years. Anatomically speaking osseous foci were more frequent in the first group; in the second group primary synovial affections occurred as often as primary osseous ones; in the third group, in cases commencing after the twentieth year, osseous foci prevailed (two-thirds of the cases). Complications with tuberculous diseases of internal organs increased in frequency in the third group (15, 20, 37) but those more local ones of the bones, skin, etc., remained about the same (17, 16, 14%).

The final results in the three groups, in percentages, were as follows: Complete cure, 50, 39, 27; incomplete or uncertain, 32, 6, 12; cure by amputation, 3, 16, 16; deaths, 15, 39, 45.

The frequency of complete cure, with or without an operation, is but half as great after twenty years as it was in the first ten; while the death-rate is trebled.—*Deutsch. Zeitsch. f. Chirg.* Bd. 22. Hft. III and IV.

V. ON THE FINAL RESULTS OF RESECTIONS OF JOINTS. By Dr. BERTHOLD KORFF (Würzburg). The author reports from the surgical clinic of Würzburg on the issue of 104 cases of excision of joints performed by Prof. Maas in the surgical clinic of Freiburg, Baden, having been enabled either to examine the cases previously or at least to receive accurate accounts of their status. He makes no mention of the technical details of the operations, but confines himself to giving, for the most part in a series of exhaustive tables, the results achieved, taking only the mode of dressing followed into consideration. All the cases, comprising three exsections of the shoulder, thirty-three each of the hip and knee, nineteen of the elbow, were treated after antiseptic methods. The first group, of twenty-nine cases, were treated after the typical Listerian method, the second, of fifty-three cases, with acetate of aluminium, the third, embracing twenty-two cases, with corrosive sublimate and common salt, the wounds being dressed with gauze prepared by soaking 1,000 parts common salt and 100 to 200 parts glycerine—the dressing being applied in a moist condition. The operations were always conducted under a spray; occasionally irrigation being employed as well.

Thirty-nine cases ended fatally, death being caused in thirty-four of the cases by tuberculous affections; in two by septicaemia, in one case by erysipelas. Both of these latter cases occurred during the use of the typical Listerian dressings.

The inferences drawn by the author are that the acetate of aluminium proved more favorable than the carbolic acid, but that the corrosive sublimate and salt surpassed both, as regards the course of wound-healing and the final restitution.

The observation is of interest that resection of the knee-joint in children under 14 years of age did not lead to any curvature of the limb, contrary to the views expressed by Volkmann and Koenig.—*Deutsch. Zeitschr. f. Chirg.* Bd. 22. Hft. I and II.

W. VAN ARSDALE (New York).

Gynæcological.

I. THE CHOICE OF METHODS IN ABDOMINAL DELIVERY. By R. P. HARRIS, M.D., (Philadelphia). A comparison of the results obtained by the old Cæsarean section, the operation with Sänger's (Leipzig) method of suturing the uterine wound and its simplifications—where by means of a welt secured by a superficial and deep suture, with or without the resection of a portion of the muscular coat, the peritoneal surfaces are brought into apposition—and by laparo-elytrotomy, with a closing reference to the Porro-Cæsarean section accompanied by tables of cases operated upon by the second and third methods. In New York and Brooklyn nine women and nine children were lost in eleven Cæsarean operations and in the balance of New York state seven women and five children in eight operations. Laparo-elytrotomy has been performed nine times in New York and Brooklyn, saving six women and five children; four of the six women saved were in labor respectively eight, eleven, sixteen and twenty-two hours, and the other two, four days and a week. Of the twelve cases, tabulated, operated upon by the Sänger method and its simplifications, six women and two children and one of twins died, while six women and ten children were saved; the deaths were so complicated by external circumstances that no opinion can be formed as to the exact effect of the length of labor on the result, thus one case died after six hours' labor, while another recovered after thirty hours; very long continued labor would, other things being equal, be an unfavorable complication. Of the Cæsarean operations, six were operated upon on the first day of labor and but one was saved; the prognosis was "unfavorable" in ten of the eleven. In the laparo-elytrotomies, four were "favorable" and five "unfavorable" for operation; all of the favorable cases recovered. Of the Sänger cases, six were favorable, all of which recovered.—*Am. Jour. Med. Sci.* 1885. October.

II. REMOVAL OF CALCULI FROM CYSTS OF THE VULVO-VAGINAL GLANDS. By A. VICTORIA SCOTT, M.D., (Philadelphia). The patient was a mulatto woman *aet.* 49 years, and passed the menopause six years previously. Three months after that epoch a swelling appeared in the right labium which finally burst, discharging bloody fluid. Later on a similar formation occurred on the other side, and thenceforth a series of abscesses succeeded one another on either side. A vaginal examination revealed two cysts connected with the vulvo-vaginal glands, with a hard eminence on either side. The patient refused surgical interference until seventeen months later, when an incision on the site of the tumors brought the knife upon a calcareous

body contained within a capsule, the calculus being of a whitish color, round and smooth, $\frac{3}{16}$ and $\frac{1}{8}$ of an inch in diameter respectively. The removal of the calculi left fistulae which had not, at the date of the report, been obliterated, and would require special operative treatment. As far as is known, no similar case has ever been recorded.—*Am. Jour. Med. Sci.* 1885. Oct.

III. FOUR CASES OF TAIFI'S OPERATION. By. J. W. HYDE, M.D., (Brooklyn, N. Y.). The ovaries and Fallopian tubes were removed in these four cases, respectively, (1) chronic ovaritis of both sides, with salpingitis of the left side, complicated with hystero-epilepsy; this case was rendered very difficult by the great extent of the adhesions, "all the viscera being matted together; irrigation with a 2% carbolicized solution and, finally, naphthalinated dressings; recovery; menstruation persistent, in a gradually diminishing extent, thirteen months later; (2) painful and enlarged right ovary with prolapsed left ovary and very sensitive tubes; very pronounced asymmetry of the body, the entire left side presenting an appearance of atrophy; no adhesions; dressings as in the first case; recovery; (3) great tenderness of left ovary, right cystic; history of severe and prolonged attack of intermittent fever, followed by dysmenorrhœa of steadily increasing severity, complicated with attacks of localized peritonitis; salpingitis; adhesions of vast extent rendered the operation extremely difficult; the right ovary not discovered and supposed to have degenerated into a cyst which was ruptured and the walls of which could not be dissected away because of their adherence to the bowel; death thirty-one hours after the operation from unsuspected disease of the kidneys, which were found to be enlarged and subject to fatty degeneration; (4) painful menstruation, becoming at times muco-purulent and offensive, scarlatinal pyo-salpinx accompanied by great tenderness of the inguinal glands with tumefaction of the surrounding tissues at each menstrual period; uterine retroflexion; prolapsus of left ovary; no adhesions, menstruation in this case and in the second case ceased at once,—*N. Y. Med. Jour.* 1885. Oct. 17.

J. E. PILCHER (U. S. Army).